Eleventhly, the bending mechanism can position the bending angle by means of various positioning designs.

Twelvethly, in an embodiment, the bending mechanism can be movably mounted on a spherical bump by means of a mounting element, so that the mounting elements can be firmly mounted on the spherical bump and rotated freely so as to position the display panel at a particular bending angle.

While the invention has been described by way of example and in terms of a preferred embodiment, it is to be understood that the invention is not limited thereto. On the contrary, it is intended to cover various modifications and similar arrangements and procedures, and the scope of the appended claims therefore should be accorded the broadest interpretation so as to encompass all such modifications and similar arrangements and procedures.

What is claimed is:

1. An electronic device, comprising:

a first display panel having a first displaying part and a second displaying part, wherein the first display panel comprises:

a first bending mechanism disposed between the first displaying part and the second displaying part to bend or spread the first display panel; and

a casing having a first surface and a second surface opposite to the first surface, wherein the casing comprises:

a rail mechanism disposed on the second surface, wherein the second displaying part is slid on the rail mechanism to shift the first display panel relatively to the casing; and

a processing unit for controlling a display range of the first display panel according to a range to which the first display panel is shifted outside the casing.

2. The electronic device according to claim **1**, wherein the first display panel is a flexible display panel.

3. The electronic device according to claim **1**, wherein the casing further comprises:

a rotation mechanism connected to the terminal of the rail mechanism to turn over the first display panel relatively to the casing.

4. The electronic device according to claim **1**, further comprising:

a benditure detecting unit for detecting a benditure of the first display plane.

5. The electronic device according to claim **4**, wherein the benditure detecting unit is disposed on the casing.

6. The electronic device according to claim **4**, wherein the benditure detecting unit is disposed on the first display panel.

7. The electronic device according to claim **1**, further comprising:

a shift detecting unit for detecting the shift of the first display panel.

8. The electronic device according to claim **7**, wherein the shift detecting unit is disposed on the casing.

9. The electronic device according to claim **7**, wherein the shift detecting unit is disposed on the first display panel.

10. The electronic device according to claim **7**, wherein the shift detecting unit merely comprises one detector.

11. The electronic device according to claim **7**, wherein the shift detecting unit comprises a plurality of detectors arranged along a shifting direction of the first display panel.

12. The electronic device according to claim **1**, further comprising:

a second display panel having a third displaying part and a fourth displaying part, wherein the second display panel comprises:

a second bending mechanism disposed between the third displaying part and the fourth displaying part to bend or spread the second display panel;

wherein, the fourth displaying part is slid on the rail mechanism to shift the second display panel relatively to the casing.

13. The electronic device according to claim **12**, wherein the first display panel and the second display panel are shifted away from the casing in two opposite directions.

14. The electronic device according to claim **1**, further comprising:

a touch panel disposed on the first surface of the casing.

15. The electronic device according to claim **14**, wherein the touch panel is for displaying a plurality of keys.

16. The electronic device according to claim **14**,

wherein the processing unit is further for controlling a display frame of the touch panel according to a range to which the first display panel is shifted outside the casing.

17. The electronic device according to claim **1**, wherein the first bending mechanism comprises:

at least one arc-shaped connecting element; and

at least two rollers disposed at the two ends of the arc-shaped connecting element.

18. The electronic device according to claim **17**, wherein the first bending mechanism comprises two arc-shaped connecting elements and a cross section of each arc-shaped connecting element is substantially a quarter-circle arc.

19. The electronic device according to claim **17**, wherein the first bending mechanism further comprises:

a gear;

a screw pillar engaged with the gear; and

a motor for driving the screw pillar to rotate.

20. The electronic device according to claim **17**, wherein the first bending mechanism further comprises:

a plurality of bumps disposed on one of the rollers; and

an elastic arms being against between two of the bumps.

21. The electronic device according to claim **17**, wherein the first bending mechanism further comprises:

a plurality of hard bumps disposed on one of the rollers;

a ring element; and

a plurality of soft bumps disposed inside the ring element, and each soft bump is engaged between two of the hard bumps.

22. The electronic device according to claim **17**, wherein the first bending mechanism further comprises:

a plurality of pins;

a plurality of elastic elements disposed inside one of the rollers, wherein the elastic elements are respectively against the pins;

a ring element; and

a plurality of hard bumps disposed inside the ring element, wherein each pin is engaged between two of the hard bumps.

23. The electronic device according to claim **1**, wherein the first bending mechanism comprises:

a spherical bump; and

a mounting element movably mounted on the spherical bump.

24. The electronic device according to claim **1**, wherein the first bending mechanism comprises:

a retractable element disposed between the first displaying part and the second displaying part to extend or contract the first bending mechanism according to the benditure.

25. A display panel having a first displaying part and a second displaying part, wherein the display panel is disposed inside a casing, the casing has a first surface and a second surface opposite to the first surface, the casing comprises a rail mechanism disposed on the second surface, and the display panel comprises: